

**Figure 1. Amino Acid Sequences of Murine 1A6 and Human Consensus Sequences of Heavy Chain Subgroup III (HumIII) and Light Chain  $\kappa$  Subgroup I (Hum $\kappa$ I).**

**V<sub>H</sub> Domain**

	1	11	21	31	41
Mouse1A6	EVQLQQSGAE	LVKPGASLKL	SCTASGFNIK	<b>DTYIHWMKQR</b>	PEQGLEW I GR
	* *	* *	* *	* *	* *

HumIII	EVQLVESGGG	LVQPGGSLRL	SCAASGFNFS	-----WVRQA	PGKGLEWVA—
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	51 a	61	71	81 a bc	91
Mouse1A6	<b>IDPANDNTIYD</b>	<b>PKVQ GKATMT</b>	ADTSS NTAYL	<b>QLNSLTSEDTAVY</b>	YCTT
		* *	* *	* *	

HumIII	-----A	<b>DSVKGRF</b>	T IS	RDDSKNTAYL	QMNSLRAEDTAVY YCTT
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	103	111
Mouse1A6	<b>SGYWFA</b>	<b>YWGQGT</b> LT VSS

HumIII	-----	--WGQGTLT VSS
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**V<sub>L</sub> Domain**

	1	11	21	31	41	51
Mouse1A6	DIVLTQSPAT	LSVTPGDSVS	LSCRASQSIS	NNLHWYQQKH	SESPRLLIKH	<b>ASQ</b>
	* *	* *	* *	* *	* *	

Hum $\kappa$ I	DIQMTQSPSS	LSASVGDRVT	ITC-----	-----	WYQQKP	GKAPKLLIY -- ----
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	61	71	81	91	101	
Mouse1A6	<b>SISG</b> I PS	RFSGSGSGTD	FTLSINSVET	EDFGMFFC <b>QQ</b>	<b>SNSW</b> PYT <b>FGG</b>	GTKLEIKR
	*		* *	* *	*	*

Hum $\kappa$ I	---GVPS	RFSGSGSGTD	FTLTISSLQP	EDFATYYC ---	-----	FGQ	GTKVEIKR
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The CDR residues as defined by both Kabat and Chothia are shown in boldface.

Fig. 2A

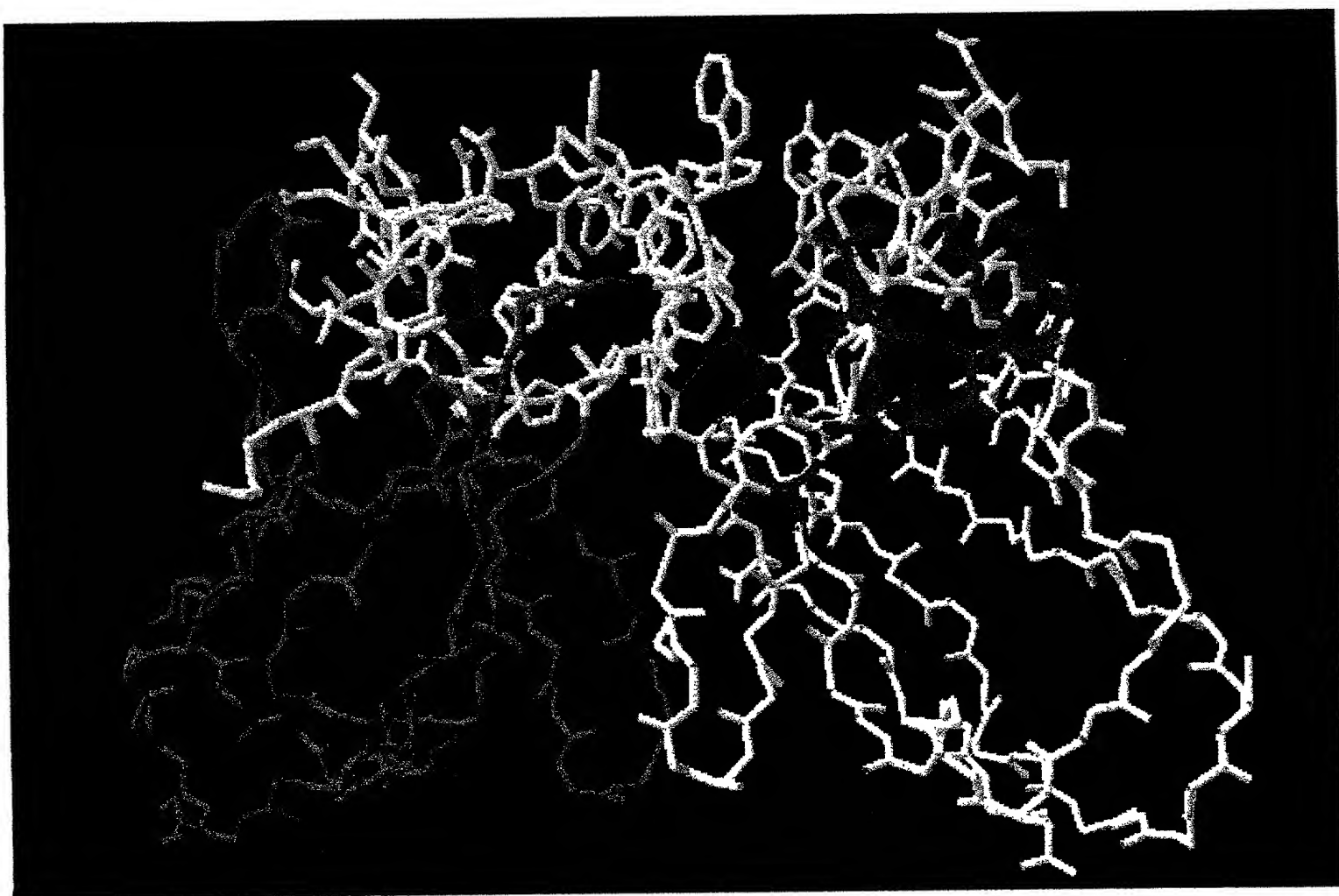


Fig. 2B

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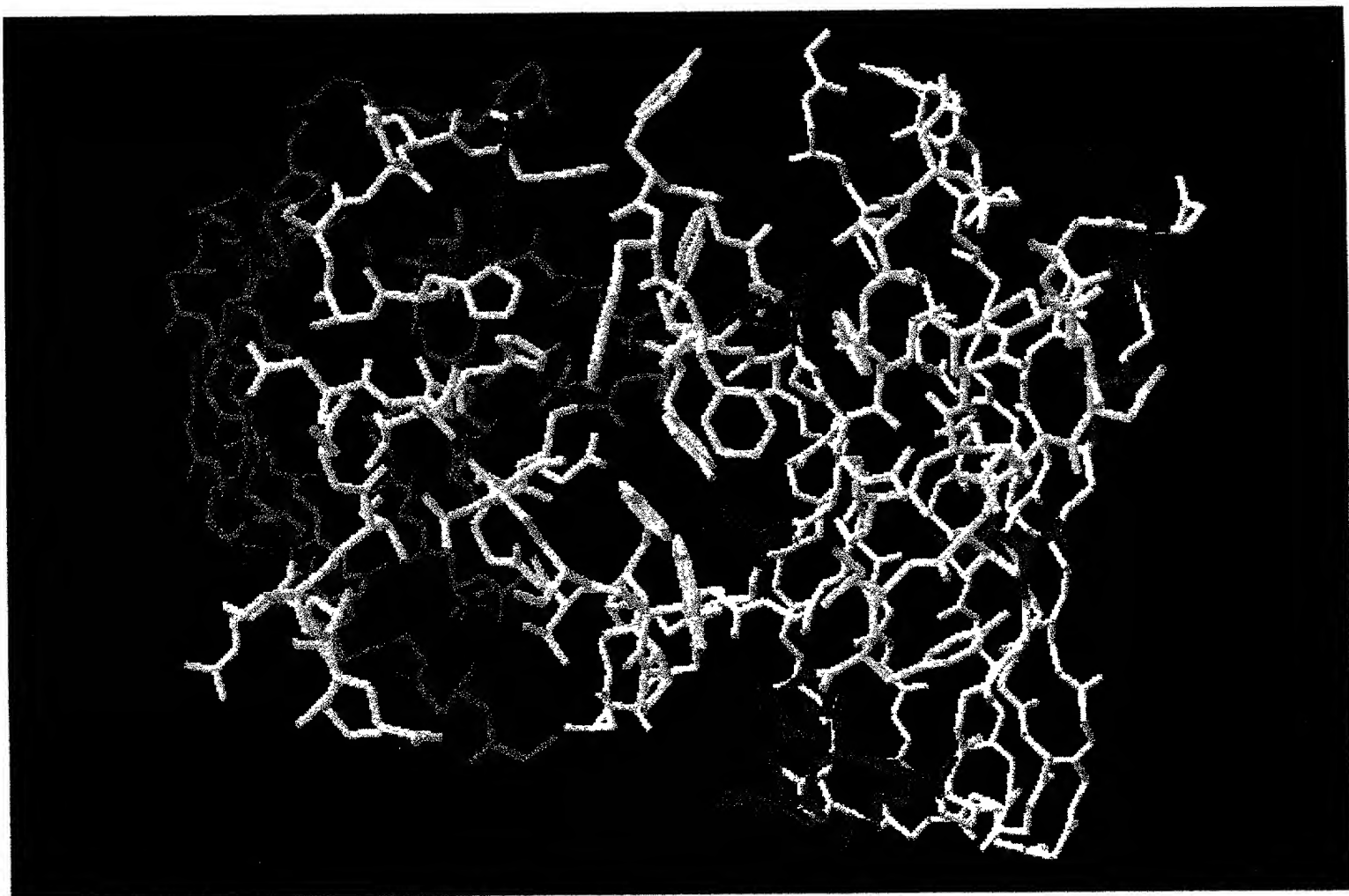
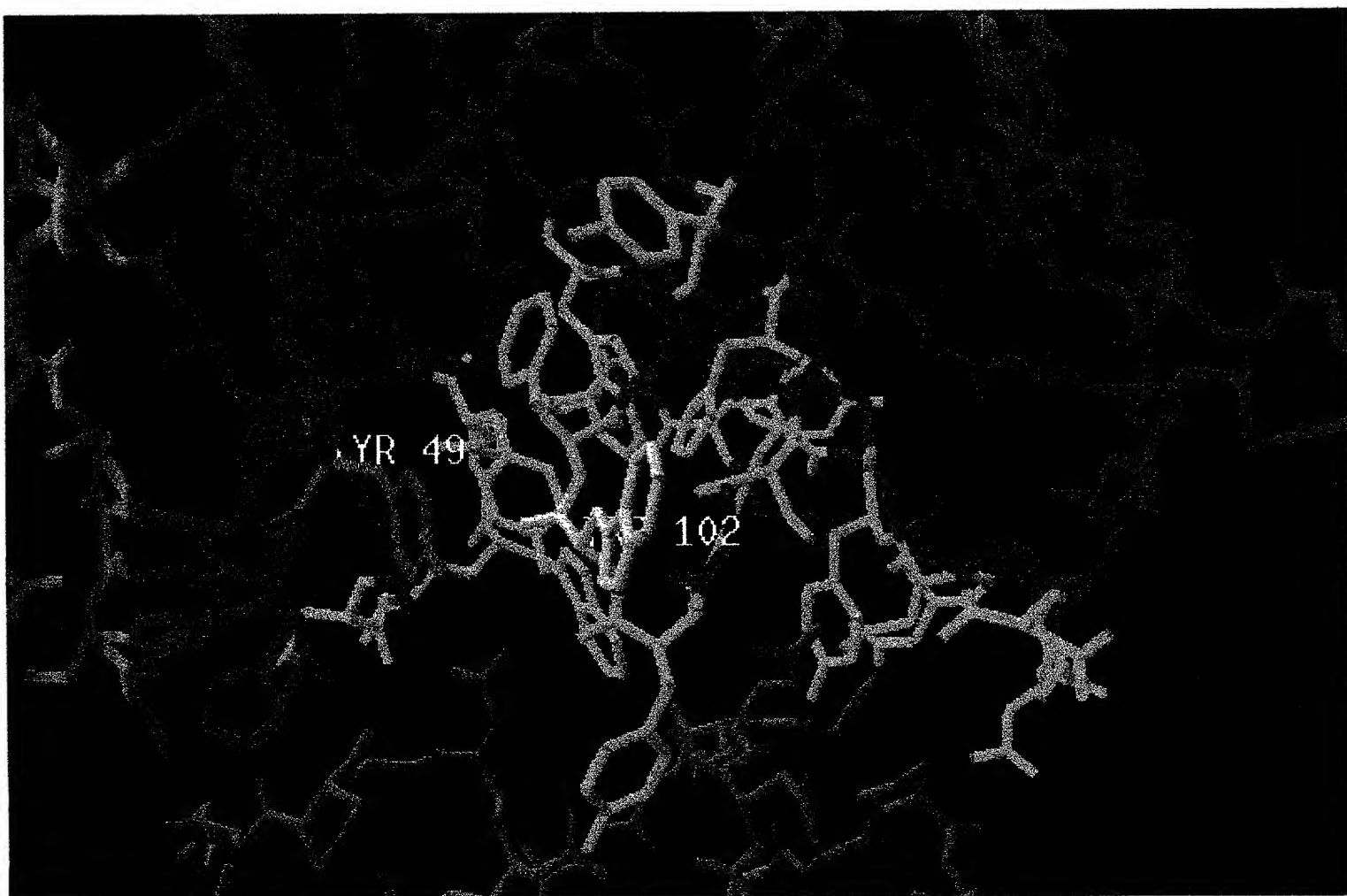


Fig. 2C

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[illegible]

	1	11	21	31	41
Mouse	EVQLQQSGAE	LVKPGASLKL	SCTAS <b>G</b> FN <b>I</b> K	<b>D</b> TY <b>I</b> HW <b>M</b> K <b>Q</b> R	PEQGLEW <b>I</b> GR
	**    **	*    *    *	*	*    *    *	**    *
Hum19	EVQLVESGGG	LVQPGGSLRL	SCAAS <b>G</b> FN <b>I</b> K	<b>D</b> TY <b>I</b> HW <b>V</b> R <b>Q</b> A	PGKGLEW <b>V</b> AR
HumIII	EVQLVESGGG	LVQPGGSLRL	SCAAS <b>G</b> FN <b>F</b> S	-----WVRQA	PGKGLEW <b>V</b> A—

	51	a	61		71		81	a b c	91
Mouse	IDPANDNTIYD PKVQGKATMT ADTSS NTAYL QL NSLTSEDTAVY YCT I								
			*	*	*	* ..*	*	**	*
Hum19	IDPANDNTIYA DSVKG RFT IS SDDSKNTAYL QMNSLRAEDTAVY YCTA								
					*				*
HumIII	-----A DSVKG RFT IS RDDSKNTAYL QMNSLRAEDTAVY YCTR								

		103	111
Mouse	<b>SGYWFA</b>	<b>YWQG</b> QTLVT	VSS
Hum19	<b>SGYWFA</b>	<b>YWQG</b> QTLVT	VSS
HumIII	-----	--WGQTLVT	VSS

	1	11	21	31	41	51
Mouse	DIVLTQSPAT LSVTPGDSVS LSCRASQ <b>SIS</b> NNLHWYQ <b>QKH</b> SESPRLLI <b>KH</b> ASQ					
	* * * * *					
Hum19	DIQMTQSPSS LSASVGDRVT ITCRASQ <b>SIS</b> NNLHWYQ <b>QKP</b> GKAPKLLI <b>YH</b> ASQ					
HumkI	DIQMTQSPSS LSASVGDRVT ITC----- WYQ <b>QKP</b> GKAPKLLI <b>Y</b> -- ----					

	61	71	81	91	101	
Mouse	<b>SISG I PS</b>	RFSGSGSGTD	FTLSINSVET	<b>EDFGMFFCQQ</b>	<b>SNSWPYTFGG</b>	GTKLEIKR
	*		* * * *	* * * *		* *
Hum19	<b>SISGVPS</b>	RFSGSGSGTD	FTLTISSLQP	<b>EDFATYYCQQ</b>	<b>SNSWPYTFGQ</b>	GTKVEIKR
HumkI	----GVPS	RFSGSGSGTD	FTLTISSLQP	EDFATYYC ----	-----FGQ	GTKVEIKR

The CDR residues as defined by both Kabat and Chothia are shown in boldface.

**Figure 4. cDNA Sequences of Humanized scFv3 (Hum3) [SEQ ID. 2].**

The restriction sites are underlined. CCATGG NCO I SITE; GGATCC BAMH I SITE; GTTAAC HPA I SITE

CGAACCATGGGCGATATCcgatgACCCAATCTCCGtctagcCTGAGCgccAG  
TgttGGTgatCGAGTTaccattactTGCCGCGCCAGCCAATCTATCAGTAATAATCTTC  
ACTGGTATCAACAAaaaccgggtaaagctCCGaaaCTTCTTATCAAACACGCCTCTCAG  
AGCATTAGCGGCgttCCGAGCCGCTTCTCTGGCTCTGGCTCGGGCACGGACTTT  
ACCCTTaccATCAGCTCTcttcagccgGAAGACtttGCCaccTATtatTGTCAGCAGTCTAA  
TAGCTGGCCGTATACCTTCGGTcaaGGTACCAAGgtcGAGATTAAGCGCGGCGG  
TGGCGGTTCTGGTGGCggtgtagcggtaggcGGTGGATCCGGTGGCGGTGGCAGCGA  
AGTTCAACTTGTTGAGTCTGGTGGCGGTCTGGTTCAGCCGGGTGGCTCTCTGC  
GCCTGTCTTGCGCAGCAAGCGGTTTCAACATTAAGGACACCTACATCCATTGG  
atgAGGCAAGCTCCGGGTAAGGGTCTGGAGTGGGTGGCACGTATCGACCCGGC  
AAACGACAACACCATTTACGATCCGAAGGTGCAGGGCCGTTTTACTatgTCTGC  
GGACacCTCTAAGAACACCGCGTACCTTCAGATGAACTCTCTGCGTGCCGAGG  
ACACCGCCGTCTACTACTGCACGACCTCTGGCTACTGGTTTGCCTACTGGGGC  
CAGGGCACGCTTGTCACCGTCTCTTCTGGTtAaCCC

**Figure 5. Protection of HRV15 infection by mouse 1A6 scFv (Ms1) and humanized 1A6 scFv proteins (Hs3, 4, 7, 17, 18, 19 and 21).**

